



**Fourth Annual Symposium of the American Academy of Nanomedicine
Bolger Center, Potomac, Maryland**

Thursday, September 4, 2008

12:45 pm

Welcome and Introduction

Esther Chang (*Georgetown U.*), Conference Co-Chair

1:00 pm

Keynote Lecture #1

Introduction: Chiming Wei (*Johns Hopkins U.*), President of AANM

Keynote Speaker: Sam Stupp (*Northwestern U.*):

“Nanotechnology for Regenerative Medicine”

1:50 pm

Novel Nanomaterials and Their Biomedical Applications

Chairs: Marianna Foldvari (*U. of Waterloo*)

Don Haynie (*Artificial Cell Technologies*)

1. Joe DeSimone (*UNC*): "Monodisperse, Shape-Specific Nanobiomaterials for Cancer Therapeutics and Imaging Agents"
2. Tarek Fahmy (*Yale U.*): "Engineering Therapeutic Immune Responses with biodegradable nanomaterials"
3. Yoshinobu Baba (*Nagoya U.*): "Nanobiodevices for Preventive Medical Engineering"
4. Sriram Subramaniam (*NCI*): "Bridging the gap: Imaging subcellular architecture at molecular resolution using 3D electron microscopy"

3:30 pm

Break

3:50 pm

Basic Science Advances Driving Innovation in Nanomedicine

Chairs: Susan Gilbert (*Rensselaer Polytechnic Institute*)

Rod Lim (*University of Basel-Switzerland*)

1. Roderick Lim (*U. of Basel-Switzerland*): "The Nanomachinery of the Nuclear Pore Complex and the Rise of Bio-synthetic Molecular Machines"
2. James Castracane (*College of Nanoscale Science and Engineering, U. of Albany-SUNY*): "Nanotechnology for Nanomedicine: Use of IC Wafer Fabrication Methods for Bio-Research"
3. Douglas B. Chrisey (*Rensselaer Polytechnic Institute*): "How Can We Leverage Nature's Directed Self-Assembly to Create Novel Constructs?"
4. John Dagata (*NIST*): "Physical characterization methods for development of nanoparticle delivery systems"
5. Lajos P. Balogh (*Roswell Park Cancer Institute*): "Photomechanical Therapy: Destruction of Cells with Microbubbles Generated by Laser Induced Optical Breakdown of Targeted Nanocomposites"

6:00 pm **Dinner and Poster Viewing**

7:30 pm **NCI's Vision for Cancer Nanomedicine:**

Chair: Aristides Requicha (*USC*)

1. Piotr Grodzinski (*NCI*): "Cancer Nanotechnology – Current Achievements and Future Prospects"
2. Jongyoon Han (*MIT*): "Microfluidic Biomolecule Concentration for Enhancing Assays for Low-abundance proteins"
3. Sam Wickline (*Washington U.*): "Novel approach for specific delivery of cytolytic peptides to cancer cells using molecularly targeted perfluorocarbon nanoparticles"
4. Anil Patri (*Nanotechnology Characterization Laboratory, NCI*): "Preclinical Characterization Resources for Clinical Translation of Nanomedicines"

Friday, September 5, 2008

8:20 am **Drug and Gene Delivery**

Chairs: Hamid Ghandehari (*U. of Utah*)
Yuri Lyubchenko (*U. of Nebraska*)

1. Ernst Wagner (*Center for Drug Research and Center for NanoScience, LMU, University of Munich*): "Dynamic nucleic acid polyplexes for targeted tumor therapy"
2. Peixuan Guo (*U. of Cincinnati*): "Reengineering of phi29 DNA packaging motor for the delivery of drug, siRNA, and gene to specific cells"
3. Sangbok Lee (*U. of Maryland*): "Silica Nanotubes: Multifunctional Designer Nanoparticles at Nano-Bio Interfaces"
4. Robert Blumenthal (*Nanobiology Program, NCI*): **(to be confirmed)**

10:00 am **Break**

10:20 am **Translational Nanomedicine**

Chairs: Mike Heller (*U. of California at San Diego*)
Rutledge Ellis-Behnke (*MIT*)

1. Rutledge Ellis-Behnke (*MIT*): "Nanohealing in Hamster Vision, Nanomedicine for functional recovery of central nervous system"
2. Leaf Huang (*UNC*): "siRNA delivery by ligand-targeted, self-assembled nanoparticles"
3. Savio Woo (*Mt. Sinai School of Medicine*): "Nanoparticle-Mediated Gene Therapy for Metabolic Disorders: Hepatic Delivery of Mini-Circular DNA for Complete Correction of PKU"
4. Martin Woodle (*Aparna Biosciences Corp.*): "Tumor targeting nanoparticle delivery of gene selective nucleic acids"

- 12:00 am **Lunch and Poster Viewing**
- 1:20 pm **Funding Opportunities**
Chair: Kuan Wang (*NIH*)
1. Jeffrey Schloss (*NIH*): "Nanoscience and Nanotechnology: Research for Biology and Medicine"
 2. Jean Reed (*DoD Chemical and Biological Defense Program*):
 3. Linda Beth Schilling (*NIST*): "Overview of the Technology Innovation Program (TIP)"
- 2:40 pm **Top 4 Poster Submission Oral Presentations**
Chair: Marianna Foldvari (*U. of Waterloo*)
- 3:30 pm **Break**
- 3:50 pm **Diagnostics: Imaging and Biosensors**
Chairs: Ryan Tian (*U. of Arkansas*)
 Chiming Wei (*Johns Hopkins U.*)
1. Jeff Bulte (*Johns Hopkins U.*): "MRI Cell Tracking Using Magnetic Nanoparticles"
 2. Kathleen Pirolo (*Georgetown U.*): "Tumor-targeted Nanoparticle delivering novel MR imaging agent"
 3. Yuri Lyubchenko (*U. of Nebraska*): "Nanoimaging technology for studying the molecular mechanisms of neurodegenerative diseases"
 4. Bruce Yu (*U. of Maryland*): "Development of a New ¹⁹F MRI Agent"
- 5:30 pm **Keynote Lecture #2:**
Introduction: Justin Hanes (*Johns Hopkins U.*)
Speaker: Robert Langer (*MIT*): "Nanotechnology" (**presentation via Live Video**)
- 6:30 pm **Dinner and Poster Viewing**
- 7:30 pm **AANM Board Meeting**

Saturday, September 6, 2008

- 8:20 am **Clinical Applications of Nanomedicine**
Chairs: Donald A. Tomalia (*Central Michigan U.*)
 Peixuan Guo (*U. of Cincinnati*)
1. Donald A. Tomalia (*Central Michigan U.*): "Dendrimers in Clinic"
 2. Masayuki Yamato (*Tokyo Women's Medical University*):
 3. Mien-chie Hung (*MD Anderson*): "Cancer-Targeting Gene Therapy"
 4. Lawrence Tamarkin (*CytImmune*): "CYT-6091 (Aurimune™): A Model Cancer Nanomedicine"
- 10:00 am **Break**

- 10:20 am **Nanomaterial Safety and Toxicology**
Chairs: Lajos P. Balogh (*Roswell Park Cancer Inst.*)
Mohamed Khan (*Roswell Park Cancer Inst.*)
1. Nakissa Sadrieh (*FDA- Associate Director for Research Policy and Implementation*): "Safety Considerations for the Regulation of Nanomaterial-Containing Therapeutics"
 2. Vickie Colvin (*Rice U.*): "Environmental and Health Effects of Nanomaterials - Principles to making Systems Safe by Design"
 3. Sally Tinkle (*Senior Science Advisor to the Deputy Director, NIEHS*): "Harnessing the Power of Nanotechnology for Human Health: the NIEHS Research Perspective"
 4. Mohamed Khan (*Roswell Park Cancer Inst.*): "Dendrimer nanocomposites in radiotherapy and imaging of the tumor microvasculature"
- 12:00 pm **Lunch**
- 1:20 pm **Keynote Lecture #3**
Introduction: Esther Chang (*Georgetown U.*),
Speaker: Mihail Roco (*NSF*): "Long-term View for Nanotechnology Research and Development"
- 2:10 pm **Commercialization and Patent Protection**
Chairs: Raj Bawa (*Bawa Biotechnology and Rensselaer Polytechnic Inst.*)
James Castracane (*College of Nanoscale Science and Engineering*)
1. Raj Bawa (*Bawa Biotechnology and Rensselaer Polytechnic Inst.*): "Protecting Nanomedicine Inventions via Patents - A Primer for Scientists and Physicians"
 2. Konstantina M. Katcheves (*Saul Ewing LLP*): "Making Your Nanotech Intellectual Assets Attractive to Investors: Best Practices for Creating a Winning IP Strategy"
 3. Jeff Mills and Brian Del Buono (*Sterne, Kessler, Goldstein & Fox, PLLC*): "Recent changes in patent laws and their impact on Nanomedicine"
 4. Sean Passino (*ASHE, P.C.*): "How to Fix Patents to Maximize (or Minimize) Their Value"
- 3:50 pm **Break**
- 4:10 pm **Award Ceremony - Top Posters**
Chiming Wei (*Johns Hopkins U.*), President of AANM
- 4:20 pm **Closing Remarks for the 4th AANM Annual Meeting**
Justin Hanes (*Johns Hopkins U.*), Conference Co-Chair
- 6:00 pm **Dinner will be included for those staying at the Bolger Center on Saturday night**

Sunday, September 7, 2008

9.00 am **International Nanomedicine Symposium**
Chiming Wei (*Johns Hopkins U.*), President of AANM

American, European, Asian, Scandinavian and other sister Academies of Nanomedicine are in the process of forming the International Academy of Nanomedicine: Organization and planning for future joint activities and symposiums

12:00 pm Symposium Adjourns